Site Inspection and Analysis Plan

Loraine Refinery

Creek County, Oklahoma

CIRCLA # OKN000606909

Date:

March 24th, 2009

State of Oklahoma

Department of Environmental Quality

Prepared by:

Todd Downham, Environmental Programs Specialist II

Approved by:

Hal Cantwell, Environmental Programs Specialist IV

Approved by:

Philip Ofosu, EPA Region VI Site Assessment Manager

Table of Contents

1. Introduction

The State of Oklahoma Department of Environmental Quality (DEQ) is tasked by the U.S. Environmental Protection Agency (EPA), as authorized by CERCLA and as amended by SARA, under the Multi-Site Cooperative Agreement (CA # V-006465-01) to conduct a Site Inspection (SI) of The Lorraine Refinery site (CERCLIS # OKN000606909) located in Creek County, Oklahoma (Reference 1).

The purpose of this investigation is to collect information concerning conditions at the site sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation under CERCLA/SARA, and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL). This investigation builds upon the body of information collected during the Preliminary Assessment (PA) phase by collecting physical environmental samples for analysis to determining the presence and extent of hazardous substances form the site. The primary objective of the SI is to evaluate the extent to which the site presents a threat to human health or the environment. The SI will examine and test the hypotheses developed during the Preliminary Assessment (PA), which was conducted by the DEQ in September 2008, by collecting and analyzing environmental media samples to determine whether hazardous substances are present at the site and are migrating to the surrounding environment. The SI will follow the procedures set forth in the EPA *Guidance for Performing Site Inspections Under CERCLA*, Interim Final, EPA 540-R-92-021 and will be used in support of a decision by EPA Region 6 as to whether the site warrants further investigation under CERCLA (Reference 2).

This investigation will entail the collection of additional non-analytical data concerning the site and its environs, the collection of a limited number of media samples for laboratory analysis, the interpretation of the analytical results, scoring the site using the Hazard Ranking System as programmed into the Quickscore computer software package, and a final report to be prepared by DEQ and submitted to EPA for a decision as to whether the site should proceed in the Superfund process. Through this process, sufficient information will be accessed to enable EPA to make a decision as to whether: 1) additional information is needed to better characterize the potential hazards at the site and therefore task the site for an Expanded Site Inspection (ESI); 2) the site is immediately proposed to the National Priorities List (NPL); 3) the site presents an imminent threat to human health or the environment and is referred to the Emergency Response Branch (ERB) of EPA for immediate action; or 4) the site represents little risk to human health and the environment and is given the designation “No Further Remedial Action Planned” (NFRAP).

The project will follow the procedures set forth in the Quality Assurance Project Plan for Site Assessment (QAPP) (Appendix A) and the approved DEQ Quality Management Plan (QMP) for state fiscal year 2009 (Reference 3).

2. Site Description

2.1 Location

The Lorraine Refinery site is located in NW ¼ NW1/4 of S29 T16N R9E and the SW corner of S20 T16N R9E in Creek County, Oklahoma. The site's center has the coordinates 35° 50' 33.37" north latitude and 96° 23' 09.06" west longitude. The site covers approximately 15 acres.
The area is bounded to the south and east by the St. Louis and San Francisco Railroad, to the west by Sand Creek and highways 66 and 48, and the property extends 5.448 acres north of County road E0810. The property is divided into a northern portion and southern portion by E0810. (Reference 4, 5).

2.2 Site Description and Operational History

The northern portion of the site is rural land that is no longer in use, while the southern portion of the site is utilized by the First Assembly of God Church and one residence. Site access is not controlled. There are no fences on the property Reference 5).
There are no schools or day cares located within 200 feet of the site. The church owning the property has two full time employees. There are 31 residences within a quarter mile of the site, as well as a hotel with 36 rooms, and an owner, his wife and two children all of whom live there full time. The drainage pattern of the southern portion of the site is primarily to the west and the drainage pattern for the northern portion of the site is to the south (Reference 5).
The site is the former location of the Lorraine Refinery, containing multiple storage tanks and refinery operation buildings. All refinery tanks and buildings have been leveled. The land is primarily pavement, church buildings, grasses, and trees. The southern portion of the site is outlined by trees and Sand Creek. There are multiple areas of stressed vegetation, barren areas, and visible black tarry waste deposits. The northern portion of the site is well vegetated, however the soil underneath the vegetation appears contaminated in addition to copious barren areas of black hard material of hydrocarbon nature (Reference 5).
A detailed title search in the Creek County Clerk office confirms that the property was used in oil refinery operations from 1915 until it was bought by the H. F. Wilcox Oil and Gas Company in 1937. The first recorded owner of the property was Joe Abraham. Mr. Abraham sold the property to an industrial owner, the Bristow Oil and Refining Company, which purchased the property in May of 1915. The property was then sold to the Continental Refining Company in September of 1916. J. W. Woodford then received the company in November 1921 and then the property was sold to the Lorraine Petroleum Company in July of 1923. At some point, the Lorraine Petroleum Company became the Lorraine Refining Company. The Lorraine Refining Company then sold the property to Interocean Oil Company in October of 1925. The property was then bought by the Producers Oil Company in February of 1929. The Producers Oil Company then sold the property to the H. F. Wilcox Oil and Gas Company in June of 1937 as part of an expansion process for the Wilcox refinery. According to a report by the ODEQ in 1994, the Wilcox company area then totaled 110 acres, all of which was sold to Wendel Sandlin

in November of 1963. After this, the property in question remained in private ownership (Reference 5).

2.3 Waste Characteristics

The area was once occupied by the refinery. The wastes associated with this type of facility include crude oil, tank residues, brine, acid and caustic sludges, heavy metals, petroleum products, coke, sulfur compounds, and solvents. Waste management practices are unknown for this facility (Reference 5, 6).
There is no information of any regulatory measures taking place at the refinery.
The Sanborn Insurance Map indicates that the property contained approximately 25 storage tanks of various sizes, a cooling pond, and around 10 buildings housing refinery operations. The map also indicated that crude oil, fuel oil, gas oil, distillate, kerosene, benzene, and benzene (petroleum ether) were all stored on the property by the Lorraine Refining Company (Reference 6).
There are several areas of stressed vegetation, barren soil, and spots of tarry waste. In the southern portion of the property, the church and its parking lot appear to be where the refinery buildings were located (Reference 5, 6).

3. Collection of Non-Sampling Data

Non-sampling data collection will include, verifying population and environmental information, as well as new information. Field activities will include a cursory investigation of whether homes are located within 200 feet of soil contamination.
Informal interviews with owners of the property may be conducted during the SI.
Preliminary Assessment data will be used for background information; however, additional information may be discovered from the landowners and public records during the investigation. All unsubstantiated remembrances will be presented as such and not as facts in the final report.

4. Sampling Activities

The objectives of the SI are to collect analytical data to identify hazardous substances at the site, investigate whether these substances have been released into the environment, and determine whether these substances have the potential to impact human health and the environment.
The pathways of concern at former Loraine Refinery site are surface water, air, and soil exposure. For the purposes of this SI, the types of samples to be collected are Sediment and Surface Soil. Surface water sample collection will be reserved for sampling beyond this SI. After further investigation, it was learned that the nearest well is no longer in use, therefore there are no primary ground water targets (Reference 5).
There will be two sampling teams. One sampling team will collect Surface Soil samples from the north and south sides of the site, as well as a Background Surface Soil sample. Another sampling team will collect Sediment samples from Sand Creek, a ditch on the east side of the site, and 15-

miles downstream. Sediment sample collection will be from south to north, so as not to contaminate downstream samples. Duplicates will be taken for each media. Background samples will be taken from the same depth, and sediment/soil type. All samples collected will be analyzed for total metals and volatile and semi-volatile organic contaminants. To support data integrity, DEQ staff will take quality assurance (QA) and quality control (QC) measures during the SI. Specific details are provided in the Site Assessment QAPP of this work plan. As stated, in the Site Assessment Unit QAPP, the collection of all samples will be performed in accordance with EPA Standard Operating Procedures and the EPA Handbook for Sampling and Sample Preservation of Water and Waste Water (Appendix A).

All samples will be collected with sampling equipment that is dedicated to the individual sampling point; therefore, field decontamination of the sampling equipment will not be necessary and cross contamination of the samples will not be an issue. The sampling team members will wear disposable latex gloves as part of their personal protection equipment during the collection of samples. To ensure that no cross contamination occurs from the gloves, after each sample has been sealed, the used gloves will be discarded and new gloves will be donned.

DEQ field staff will document all sampling activities in a logbook using permanent and waterproof ink. Each page of the logbook will be dated, numbered, and signed by each person who makes an entry. The time of the sampling and physical description of the properties of the sample will also entered in the site logbook. Errors will be corrected by drawing a single line through the error, initialing, and dating the correction. DEQ will utilize the State Environmental Laboratory (SEL) for the analyses of all samples collected during this SI.

4.1 Soil Sampling

Soil samples will be collected from the north and south portions of the site. The background sample will be uphill, outside the influence of the former refinery and tank farm, within the same soil series. Proposed sample locations and justification of the samples are described in Table 1 and depicted in Figures 1 and 2.

4.2 Sediment Sampling

Sediment samples will be collected from a runoff area on the east side of the site and from Sand Creek to the west. The background sample will be upstream, outside the influence of the former refinery and tank farm, in the same depth and sediment type. Sediment samples will also be collected from the point of merger and 15-mile end in the Little River. Proposed sample locations and justification of the samples are described in Table 1 and depicted in Figures 1 and 2.

4.3 Ground Water Sampling

The primary ground water target well was determined to be no longer in use (Reference 5). No ground water samples will be collected for the purposes of this SI.

4.4 Source Sampling

Sample locations are based on historical operations and the observance of waste. Waste samples will not be collected for the purposes of this SI. Proposed sample locations and justification of the samples are described in Table 1 and depicted in Figure 2.

4.5 Quality Assurance/Quality Control

Quality assurance and quality control (QA/QC) for the sampling event will be provided by the use of duplicate samples. A duplicate sample will be collected at an interval of 1 per 10 samples collected. Duplicate sampling tests the reliability of the sampling procedures performed. Rinsate samples will not be collected since no sampling device will be reused. QA/QC measures are discussed more specifically in the QAPP (Appendix A).

4.6 Field Activities

DEQ field personnel are scheduled to sample the site on April 22nd, 2009. The property owners have provided access to the site for the sampling event. All samples will be collected over a two day period. An additional day may be necessary to collect any non-sampling data.
Upon arrival at the site, a site reconnaissance will be conducted in order to familiarize the field team with site conditions and verify sample locations. If conditions do not allow samples to be collected at their designated location, modifications will be made, documented in field logbook, and discussed in the final report. All sample locations have been recorded in Global Positioning System (GPS) units. Two-person teams will be deployed to collect samples, one person to sample and one to operate the GPS unit. Upon collection, all samples will be properly packaged for shipping.
A field logbook will be maintained for all procedures conducted on-site. The following information will be recorded in the field logbook: information gathered during the SI that differs from information gathered during the PA; environmental conditions during the sampling event; sampling point locations; date and time of sample collections; and appearance of sample (i.e., color, turbidity). The field logbook will be kept in the site's permanent DEQ file.

4.7 Sample Shipping

Samples will be individually labeled, bagged, placed in hard plastic coolers, and packed with ice prior to shipping. All samples collected will be properly packaged, with appropriate documents, and transported by DEQ personnel to the State Environmental Laboratory (SEL) in Oklahoma City. Prior to delivering the samples, all samples collected will be stored in a locked vehicle.

5. Investigation-Derived Waste Plan

Investigation-derived wastes generated at the site will include: disposable personal protective equipment (PPE) (i.e., Tyvek, latex gloves); contaminated sampling equipment; solid waste; and excess sample material. The excess sample material obtained during sample collection will be returned to the area from which it was collected. The used PPE, and solid waste will be double-bagged in heavy-duty trash bags and returned to DEQ headquarters for proper disposal. Contaminated sampling equipment will be double-bagged in heavy-duty trash bags and returned to DEQ laboratory for proper decontamination. Non-disposable PPE (i.e., steel-toed boots, respirators) will be decontaminated in the field to the extent possible and returned to DEQ headquarters for proper decontamination (contaminated soil), it is unlikely that any PPE will become grossly contaminated.

6. Project Management

6.1 Project Contacts

EPA:
Philip Ofosu, Site Assessment Manager
U.S. Environmental Protection Agency – Region VI
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-3178

DEQ:
Todd Downham, Environmental Programs Specialist II
Department of Environmental Quality
707 N. Robinson, Suite 5100
Oklahoma City, Oklahoma 73102
(405) 702-5136

6.2 Project Personnel

Todd Downham	Environmental Programs Specialist II	Program Manager/ Health and Safety
Jon Reid	Environmental Programs Specialist	Sampling Team
Jeannine Bennett	Engineer	Sampling Team
Hal Cantwell	Environmental Programs Specialist IV	Sampling Team

Sara Downard	Environmental Programs Specialist III	Sampling Team
Kerry Paul	Environmental Programs Specialist	Sampling Team
Randi Brown	Technical Intern	Sampling Team
Isabelle Richard	Technical Intern	Sampling Team

During site activities, the DEQ sampling team may require additional personnel to assist in site activities. These additional staff members will be briefed on the sampling objectives and site conditions. The final SI report will document any additional staff that were used during the sampling event.

6.3 Project Schedule

The project is expected to begin with non-sampling activities in March 2009. Sampling activities are scheduled to take place on April 22nd and 23rd, 2009. The final SI report is scheduled to be completed and submitted to EPA- Region VI July 31st, 2009.

7. Health and Safety Plan

The field team will be briefed by the project health and safety officer on any apparent location specific health and safety concerns. Level D protective clothing and equipment is anticipated to be used for all on and off site activities. However, if conditions warrant, the health and safety officer may require the sampling team to upgrade the level of protective gear. The site command center will be located in an area upwind of any exposed waste. The SI Health and Safety Plan (HASP) will be reviewed by all DEQ sampling personnel, and all HASP guidelines will be followed during sampling activities.
Health and safety issues are discussed more specifically in the HASP (Appendix B) attached to the work plan.

8.0 Tables and Figures:

Table 1: Proposed Sample Locations and Rational

Sample ID	Location	Type	Matrix	Justification
LSS-1	Former distillate tank location	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-2	Former distillate tank location	Grab	Surface Soils	Duplicate sample of LSS-1
LSS-3	Playground area near church	Grab	Surface Soils	Children's play area
LSS-4	Former fuel oil storage area	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-5	Former storage tank area	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-6	Former storage tank area	Grab	Surface Soils	Duplicate sample of LSS-5
LSS-7	Southwest area of site	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-8	Former fuel oil storage tank location	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-9	Northeast corner of site	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-10	North end of site	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-11	North end of site	Grab	Surface Soils	Waste and stressed vegetation observed

LSS-12	Former crude oil storage tank location	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-13	Northwest corner of site	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-14	Former fuel oil storage tank location	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-15	Low-lying area south of dyke	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-16	Southeast corner of north portion of site	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-17	Northeast corner of south portion of site	Grab	Surface Soils	Stressed vegetation
LSS-18	South of main entrance of site	Grab	Surface Soils	Waste and stressed vegetation observed
LSS-19	Near parking lot of turnpike entrance north of site	Grab	Surface Soils	Background sample
LSD-1	Sand Creek, southern end of site, east of large fuel oil storage tank and cooling pong	Grab	Sediment	Possible contamination from surface water migration
LSD-2	Merger from intermittent waters and Sand Creek	Grab	Sediment	Possible contamination from intermittent surface water to perennial stream
LSD-3	Ditch south of church which	Grab	Sediment	Possible contamination

	parallels railroad			from surface water migration
LSD-4	Ditch south of church which parallels railroad	Grab	Sediment	Duplicate sample of LSD-3
LSD-5	Upstream of site, point where Sand Creek crosses Highway 48/66	Grab	Sediment	Upstream Sample, outside the influence of surface water from site
LSD-6	15-miles downstream of site	Grab	Sediment	Downstream sample at 15-mile end

Figure 1:

Off-Site Sediment and Soil Sample Areas
Loraine Refinery, Bristow, Ok.

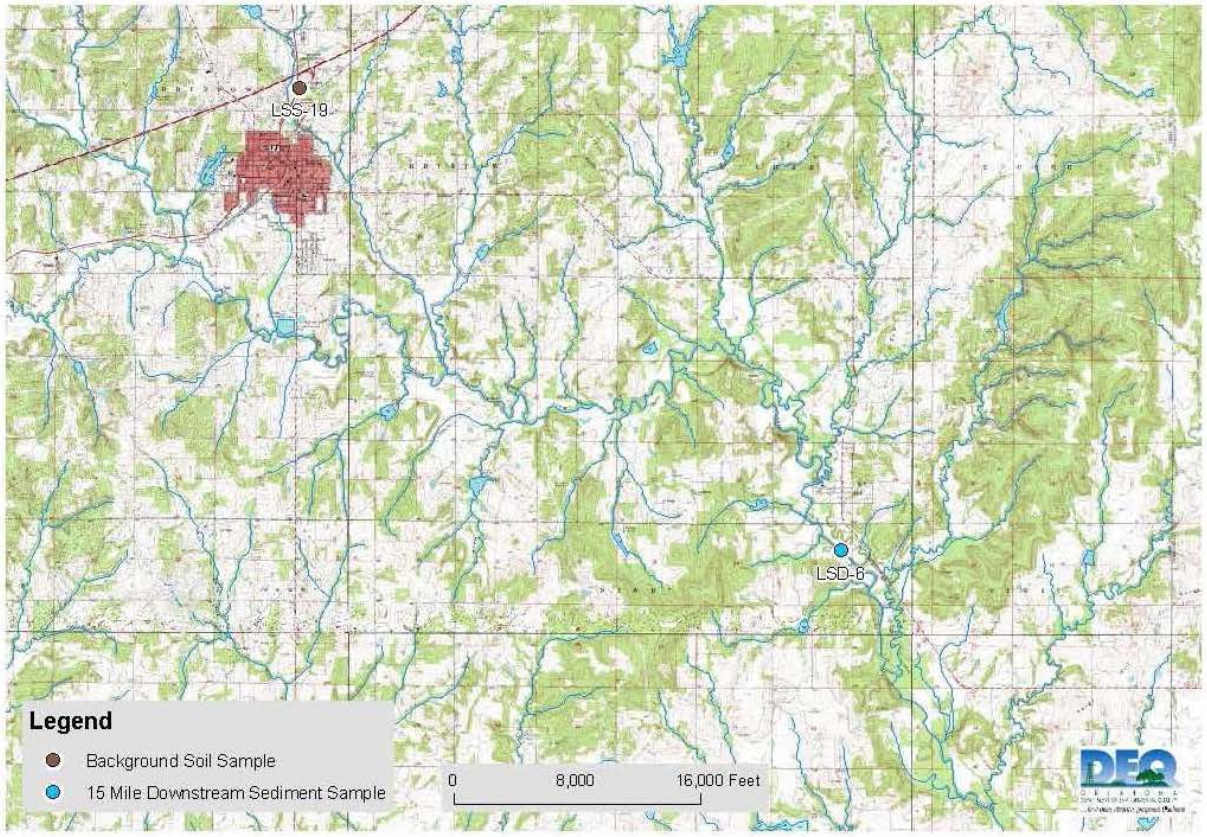


Figure 2:

Site Sediment and Soil Sample Areas
Loraine Refinery, Bristow, Ok.

List of References

1. U.S. Environmental Protection Agency. Superfund (CIRCLIS) website.
2. U.S. Environmental Protection Agency. *Guidance for Performing Site Inspections Under CERCLA Interim Final*. EPA/540-R-92-021. September 1992.
3. Oklahoma Department of Environmental Quality (DEQ). *Quality Management Plan (QMP) for State FY-09.* QTRAK # 09-039
4. U.S. Department of the Interior, Geological Survey. *7.5 minute topographic quadrangle map, Creek County.* ODEQ GIS Database.
5. State of Oklahoma Department of Environmental Quality, Preliminary Assessment of the Lorraine Refinery, September 28th, 2008.
6. Sanborn Map Company, Fire Insurance Maps, Bristow Oklahoma. 1923.

Reference 1:

_type=Containing&city_name=&county_name=creek&state_code=ok&epa_region_code=06&program_search=2&report=1&page_no=1&output_sql_switch=TRUE&database_type=CERCLIS

Superfund (CERCLIS)

Last updated on Monday, March 23rd, 2009.

Query Results

Report an Error

Only CERCLIS facility information was searched to select facilities

County Name: creek
State Abbreviation: ok
EPA Region Code: 06

Results are based on data extracted on MAR-13-2009

Note: Click on the underlined CORPORATE LINK value for links to that company's environmental web pages.
Click on the underlined MAPPING INFO value to obtain mapping information for the facility.
Click on the underlined CERCLIS_EPA_ID value to view a detailed report for the facility.
Click on the underlined RECORD OF DECISION value for a RODS Site Report.
Click on the underlined "View Facility Information" link to view EPA Facility information for the facility.
Click on the underlined "Code/Descriptions" link to view OWNERSHIP codes and descriptions.

Go To Bottom Of The Page

Facility Information

CERCLIS EPA ID	Facility Information	SITE NAME	ADDRESS	COUNTY	SITE SMSA	FEDERAL FACILITY	NPL STATUS	CORPORATE LINK	MAPPING INFO	RECORD OF DECISION (ROD) INFO	EPA REGIONAL LINK	LATITUDE
OKN000606795	View Facility Information	CONDOR CUSTOM, INC.	INTERSECTION: 902 NORTH SMATHERS AVENUE DRUMRIGHT, OK 74030	CREEK		N	Not on the NPL	No	MAP	No	No	
OK0000605169	View Facility Information	CREECO MILL AND ELEVATOR COMPANY	135 EAST 9TH STREET BRISTOW, OK 74010	CREEK		N	Not on the NPL	No	MAP	No	No	
OK0000963389	View Facility Information	DRUMRIGHT STATION	2.6 MI. N. OF OILTON ON HWY99 DRUMRIGHT, OK 74030	CREEK		N	Not on the NPL	No	MAP	No	No	
OKN000606909	View Facility Information	LORRAINE REFINERY SITE	ST. LOUIS/SAN FRANCISCO, SAND CREEK/HWY BRISTOW, OK	CREEK		N	Not on the NPL	No	MAP	No	No	
OK0001327451	View Facility Information	NU-CHROME PLATING	501 SOUTH CHESTNUT BRISTOW, OK 74010	CREEK	8560	N	Not on the NPL	No	MAP	No	No	
OK0001981349	View Facility Information	OHIO OIL REFINERY	.7 MI NE OF BRISTOW ON W. SIDE OF ST. BRISTOW, OK 74010	CREEK		N	Not on the NPL	No	MAP	No	No	
OK0000605165	View Facility Information	OILTON AUTO PACK	411 WEST OAK STREET OILTON, OK 74052	CREEK		N	Not on the NPL	No	MAP	No	No	
OK0000605158	View Facility Information	ONG KELLYVILLE	HWY 66 KELLYVILLE, OK	CREEK		N	Not on the NPL	No	MAP	No	No	
OK0001325802	View Facility Information	TIDE WATER ASSOCIATED OIL COMPANY	SOUTH OF OHIO AVE. ON HWY 16 DRUMRIGHT, OK 74030	CREEK	8560	N	Not on the NPL	No	MAP	No	No	
OK0001010917	View Facility Information	WILCOX OIL COMPANY	75 MILES NE OF BRISTOW BRISTOW, OK 74010	CREEK	8560	N	Not on the NPL	No	MAP	No	No	

Go To Top Of The Page

Total Number of Facilities Displayed: 10

Reference 2:

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington DC 20460

EPA/540-R-92-021
PB92 - 963375
September 1992

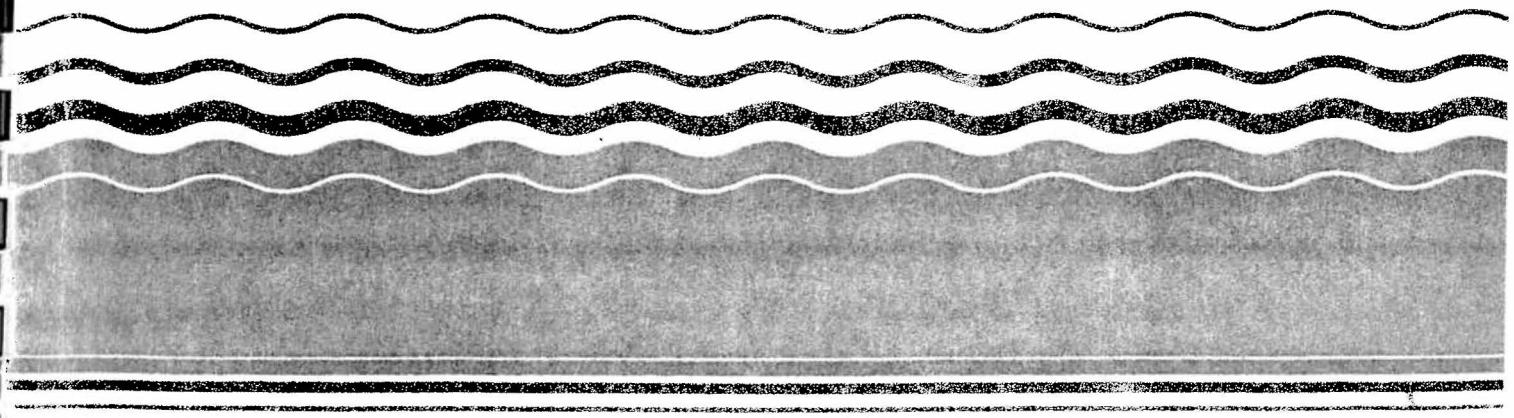
Superfund

9345.1-05

EPA

Guidance for Performing Site Inspections Under CERCLA

Interim Final



Reference 3:

J.D. STRONG
SECRETARY OF ENVIRONMENT

BRAD HENRY
GOVERNOR

STATE OF OKLAHOMA

OFFICE OF THE
SECRETARY OF ENVIRONMENT

Memorandum

November 20, 2008

To: Karen Khalafian, Oklahoma Department of Environmental Quality

From: Gayle Bartholomew

Re: Quality Management Plan (QMP) – QTRAK #09-039

The attached letter from U.S. EPA approves DEQ's Quality Management Plan. Also enclosed are fully executed signature pages. The plan will remain in effect for one year from the date of Mr. Johnson's signature. Updates or a revised plan will be submitted to EPA in October 2009. If you have any questions or need additional information, please do not hesitate to contact me by phone at (405) 530-8996 or email gnbartholomew@environment.ok.gov.

Enc.

3800 North Classen Boulevard Oklahoma City, Oklahoma 73118
(405) 530-8995 fax (405) 530-8999

APPROVALS

Name	Title	Division	Signature	Date
Steven A. Thompson	Executive Director			10-10-08
Eddie Terrell	Division Director	Air Quality		10/10/08
Scott Thompson	Division Director	Land Protection		10-10-08
Gary Collins	Division Director	Environmental Complaints & Local Services		10/10/08
David Dyke	Division Director	Administrative Services		10/10/08
Jon Craig	Division Director	Water Quality		10/10/08
Judith A. Duncan	Division Director	Customer Services		10/10/08
Joe Mashburn	QA Coordinator	Air Quality		10/10/08
Keisha Cornelius	QA Coordinator	Land Protection	Michelle Vorhes for KC	10/10/08
Subi John	QA Coordinator	Land Protection		10/10/08
Hillary Young	QA Coordinator	Land Protection		10-10-08
Amber Brawdy	QA Coordinator	Land Protection		10/10/08
Roy Walker	QA Coordinator	Administrative Services		10/10/08
Karen Miles	QA Coordinator	Water Quality		10/10/08
April Beltz	SEL QA Officer	Customer Services		10/10/08
Karen Khalafian	QA Officer	Land Protection		10/10/08

Kara Williams
Environmental Programs Manager/QA Officer
Office of the Secretary of Environment

Kara Williams
Signature

10-22-08
Date

Donald L. Johnson
Region 6 Quality Assurance Manager
U. S. Environmental Protection Agency

Signature

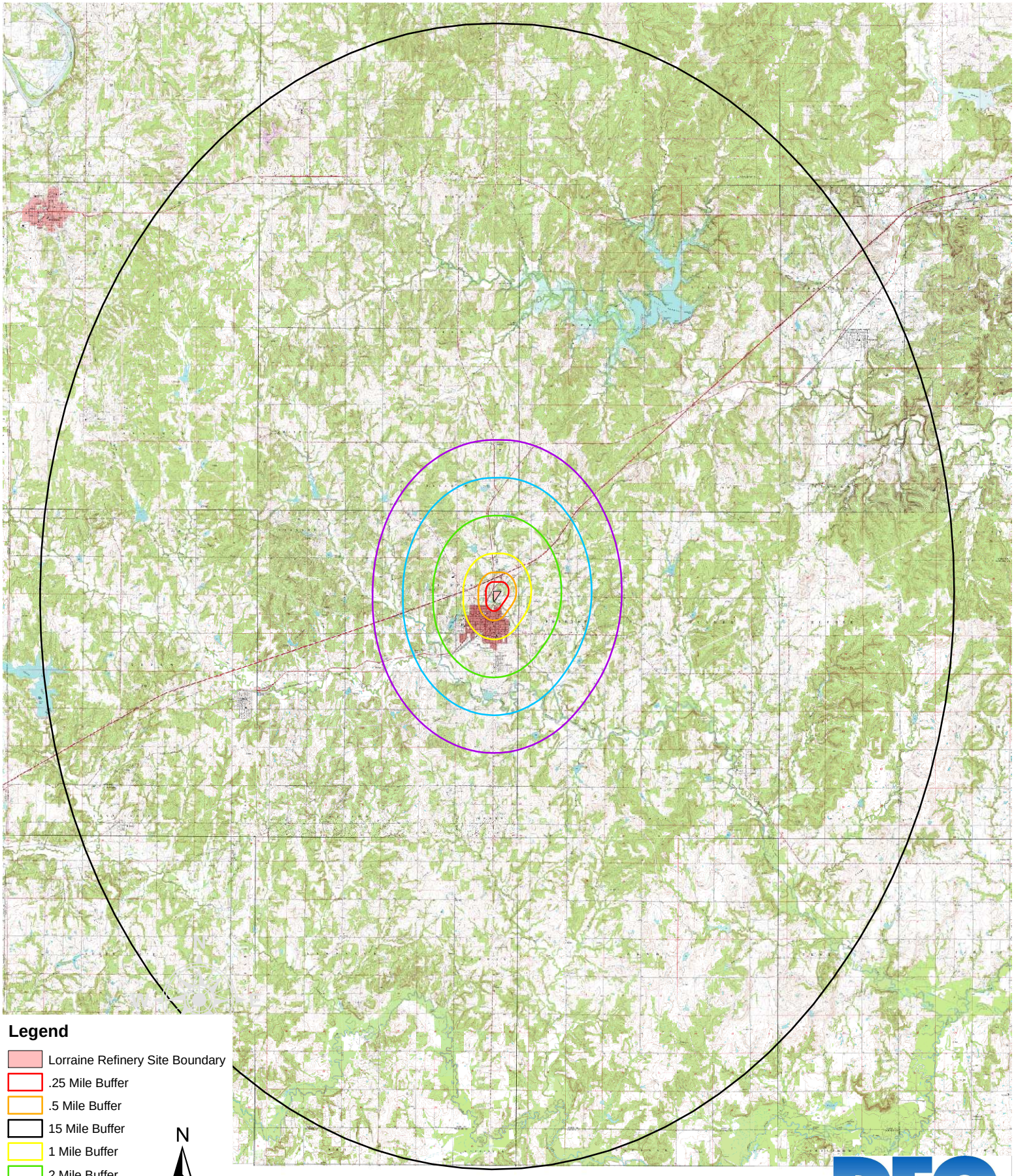
11/10/08
Date

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
QUALITY MANAGEMENT PLAN (QMP)
For State FY 2009—FY 2010

Effective: (Date of EPA Approval)

Reference 4:

Topographic Map for Lorraine Refinery SI Area



Reference 5:

PRELIMINARY ASSESMENT

of the

LORRAINE REFINERY SITE

Located near

BRISTOW, CREEK COUNTY, OKLAHOMA

September 28, 2008

STATE OF OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

Prepared by:

Vanessa Peterson, Land Protection Division Intern

Pamela Turner, Land Protection Division Intern

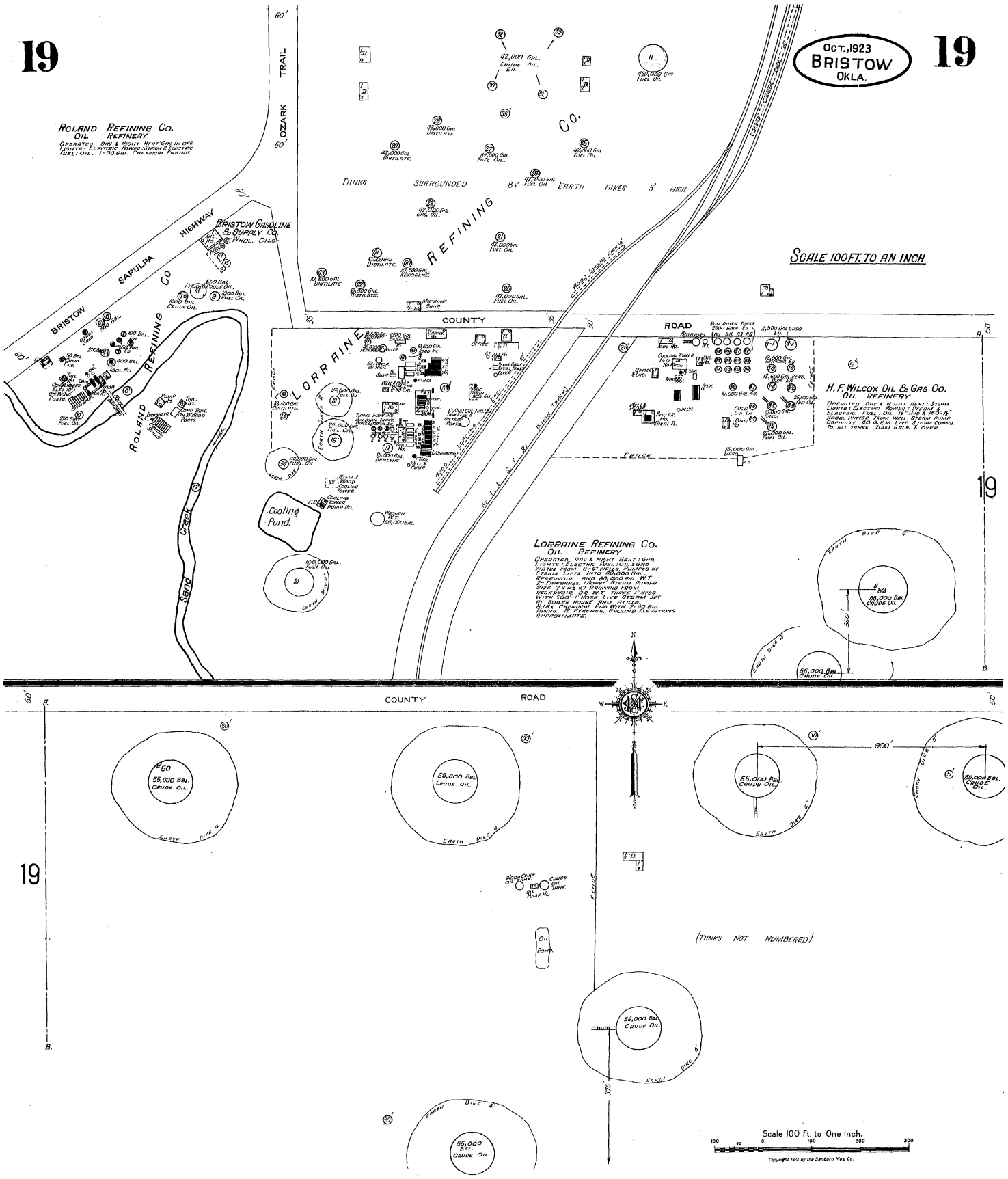
Reviewed by:

Karen Khalaflan, Environmental Programs Specialist III

Approved by:

Hal Cantwell, Environmental Programs Specialist IV

Reference 6:


19
OCT., 1923
BRISTOW
OKLA.
19
ROLAND REFINING CO.
OIL REFINERY
OZARK TRAIL
SAPULPA HIGHWAY
BRISTOW
BRISTOW GASOLINE & SUPPLY CO.
WHOL. OILS
ROLAND REFINING CO
REFINING CO.
TANKS SURROUNDED BY EARTH DIKES 3' HIGH
SCALE 100 FT. TO AN INCH
COUNTY ROAD
LORRAINE
Sand Creek
Cooling Pond
LORRAINE REFINING CO.
OIL REFINERY
H. F. WILCOX OIL & GAS CO.
OIL REFINERY
(TANKS NOT NUMBERED)
Scale 100 Ft. to One Inch.
Copyright 1923 by the Sanborn Map Co.

Appendices

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

September 9, 2008

Ms. Subi John
Site Assessment Unit
Land Protection Division
Department of Environmental Quality
707 North Robinson
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

RE: Quality Assurance Project Plan (QAPP) QTRAK # Q-08-522 for Oklahoma Department of Environmental Quality - Site Assessment Unit.

Dear Ms. John:

The Fiscal Year 2009 Quality Assurance Project Plan for Oklahoma Department of Environmental Quality - Site Assessment Unit has been reviewed and is approved. This QAPP will expire one year from the date of my signature. Enclosed is a signed approval page for your records.

If you have any questions or concerns, please feel free to contact me at (214) 665 - 3178.

Sincerely,

Philip Ofosu
Site Assessment Manager

Enclosure

cc: Don Johnson, 6MD
Walt Helmick, 6SF-D
Kathy Gibson, 6SF-VC

QUALITY ASSURANCE PROJECT PLAN
for
Site Assessment Unit
Scope of Work
FFY 2009

STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND PROTECTION DIVISION
SITE REMEDIATION SECTION
SITE ASSESSMENT UNIT

Quality Management Plan EPA QTRAK # 08-148

Title and Approval Sheet

DEQ Site Assessment Unit Leader	Hal Cantwell	08/29/08 Date
DEQ Remediation Unit QA Coordinator	Subi John	8/29/08 Date
DEQ Quality Assurance Officer	Karen Khalafian	8/29/08 Date
DEQ Site Remediation Section Manager	Amy Brittain	8/29/08 Date
EPA-Region 6 Site Assessment Manager	Philip Ofosu	9/9/08 Date

August 29, 2008

State of Oklahoma
Department of Environmental Quality
Land Protection Division
Site Assessment Unit

March 25th, 2009

Health and Safety Plan

A. General Information

Site Name:	Lorraine Refinery	EPA ID# OKN000606909
Location:	NW ¼ NW1/4 of S29 T16N R9E and the SW corner of S20 T16N R9E in Creek County, Oklahoma.	
Objective:	The Health and Safety Plan is intended to establish requirements and procedures to be followed during the sampling event to protect the health and safety of investigative personnel and the nearby public.	
Project Objective:	The objective of the Site Inspection (SI) is to collect environmental samples for laboratory analysis, to determine if the site poses a threat to human health or the environment.	
Proposed Date of Sampling Activities:	April 2009	
Background Review:	Complete: X	Preliminary: ___
Overall Hazard:	Serious: ___	Moderate: ___
	Low: X	Unknown: X

B. Waste Characteristics

Waste Type(s):	Liquid___	Solid X	Sludge___	Gas___
Characteristic(s):	Corrosive___	Ignitable___	Volatile___	
Radioactive___	Toxic___	Reactive___	Unknown X	

Site Description: The Lorraine Refinery is a historical refinery with visible waste.

Principal Disposal Method: Presumably, on-site disposal and the possibility of buried waste.

C. Hazard Evaluation

The primary hazards anticipated with field activities are not associated with the on-site wastes. They include heat and cold stress, physical and mechanical hazards, and severe weather. However, the site health and safety officer will monitor site conditions for possible blowing waste hazards. If necessary, sample team members will upgrade personal protection to include respiratory protection.

Heat and cold stress: Due to the time of year in which the sampling event will occur, heat stress in not a major concern, but cold stress is a possibility. The site health and safety officer will monitor all field members for cold stress. Work periods will be timed and breaks will focus of fluid replenishment. Work periods will be timed for forty five minutes to one hour if temperatures warrant. The exact work periods will be determined, if needed due to weather conditions, by the health and safety officer. Heat stress and fatigue are anticipated to be of low concern, due to the likelihood of cold to moderate temperatures for the time of year in which the sampling event is scheduled. Remarkable changes in weather have been known to occur, therefore, field personnel will be monitored for both cold and heat stress.

Physical and mechanical hazards: Prior to entry, field members will be briefed on the physical and mechanical hazards known to exist on site and will work in teams of two, at a minimum. Possible physical and mechanical hazards are fallen power lines, buried service lines, bodies of water, steep gradients, trenches, holes ,ditches, slippery surfaces, sharp objects, such as nails, metal shards, and broken glass,

improper material handling, which includes lifting and moving any material at the site. Animals, snakes, insects and poisonous plants are also of concern during all field activities. Hand signals will be necessary when respirators are used during sampling. The types of signals will be decided by the field team prior to sampling if their use becomes necessary.

Severe weather: Severe thunderstorms and tornados are the types of severe weather that can be anticipated. Weather forecasts will be monitored beginning 4 days before field activities are planned to occur and during on-site activities.

D. Site Safety Work Plan

Perimeter Establishment: Map/sketch attached: Yes Site Secured: No

Zone(s) of Contamination Identified: No

Personal Protection:

Level of Protection: A___ B___ C___ D X

Level D equipment that will be required includes safety glasses disposable latex gloves, and steel-toed boots. The addition of respiratory protection may be necessary of dusty conditions exist. The health and safety officer will make the determination weather the use of respirators is necessary.

The following are not allowed in areas of contamination: smoking, eating, drinking, chewing of gum or tobacco, and horseplay. Fluid replenishment will be allowed, but only at the site command center. Individual sampling team personnel, while in the work zone, must remain within eyesight of their "buddy". All personnel entering the work zone are required to have the OSHA 40-Hour Hazardous Waste Operations (HAZWOPER) training and Medical Baseline Monitoring.

Decontamination Procedures: Decontamination of personal protective equipment (PPE) in the field will be performed to the extent practical. A deconning area will be established near the command post for the deconning of personal protective equipment (PPE) and sampling equipment. While the decon area, disposable PPE and disposable sampling tools will be collected, double bagged, and storedfor final disposal at DEQ facilities in Oklahoma City. While in the decon area, exposed

skin will be washed with antibacterial moist wipes. In an emergency, the primary concern is to prevent the loss of life or severe injury to site personnel. If immediate medical treatment is required to save a life, decontamination will be delayed until the victim is stabilized. Due to the nature of the waste, which is chiefly composed of contaminated soil, removal of the boots, gloves, and perhaps the clothing of the victim in route to the hospital will ensure that emergency room will not be contaminated from the waste at the site.

Special Equipment, Facilities, or Procedures: None are anticipated, but if field conditions warrant, any modifications made in the field will be recorded in the site logbook and explained in the final report.

Site Control: Access to the site is unrestricted. DEQ field team members will continually monitor for unauthorized persons entering the site during SI activities. Trespassers will be confronted and asked to leave the site. Local police will be notified if the unauthorized persons are uncooperative. The property owners will be permitted to view all sampling activities from a safe distance.

Work Limitations: Limitations of site activity are: (1) length of day - sampling will take place only during daylight hours'; (2) severe weather – samples will not be collected if adverse weather conditions exist; (3) heavy precipitation – samples will not be collected if sample integrity is questioned (rain may affect the sample quality). If heavy precipitation is encountered, the sampling event will be postponed until weather conditions permit.

Investigative – Derived Waste Disposal: Excess sample material will be returned to the area collected. Contaminated sample equipment and personal protective equipment will be double bagged and returned to DEQ headquarters in Oklahoma City for proper decontamination. Disposable PPE and other waste generated during the sampling event will be double bagged and returned to DEQ headquarters for proper disposal.

E. Site Personnel

Team Member	Responsibility
Todd Downham	Project Manager, Health and Safety Officer
Jeannine Bennett	Sampling Team Member
Hal Cantwell	Sampling Team Member
Isabelle Richard	Sampling Team Member
Randi Brown	Sampling Team Member
Kerry Paul	Sampling Team Member
Sara Downard	Sampling Team Member
Jon Reid	Sampling Team Member

F. Emergency Information

Ambulance	911
Fire Department	911
Police	911
Hospital	(918) 367-3378 (Hillcrest Hospital, Bristow, Ok.)
Creek County Sheriff	(918) 224-4964
OK Poison Control	(800) 222-1222

All injuries or illness will be immediately reported to the project manager and/or the health and safety officer. These conditions will then be recorded into the site logbook. A cellular phone will be on-site, at the command post. A first aid kit will be located at the command center, enabling temporary first aid to be administered until necessary medical treatment can be obtained.

Chain of Command in case of emergency:

Steve Thompson – DEQ Division Director
|
Scott Thompson – Land Protection Division Director
|
Catherine Sharp – Assistant Division Director
|
Kelly Dixon – Site Remediation Section Director
|
Hal Cantwell – Site Assessment Unit Supervisor
|
Todd Downham – Program Manager/Health & Safety Officer
|
Field Team Members

Emergency Route to Hospital:

From the site travel South on Main Street, turn right (west) on W. 7th Ave, proceed West on W. 7th Ave. to Hillcrest Hospital, 700 W. 7th Ave. (918) 367-3378